Habitat Levee Design

- Habitat levees are low, wide, gently sloping vegetated levees, which may be overtopped during storm surges with nominal eroding or destabilizing.

- Habitat levees are designed to:
  - allow intermittent flooding
  - minimize artificial dispersal and denning of terrestrial predators;
  - re-establish facsimiles of marsh topographic gradients,
  - accommodate natural patterns of debris deposition and shoreline disturbance; and,
  - provide wave energy buffers.

- Shallow periodic flooding of lower edges of levees may promote dense, tall, high marsh vegetation, which provides cover (tidal refugia) for resident native marsh wildlife.

- Expected dense upper marsh vegetation on habitat levees may also reduce the efficiency of predator travel and foraging in adjacent wetlands. Intermittent overtopping by spring tides will flood out terrestrial predator dens (rats, raccoons, skunks, fox) where they are not compatible with local management priorities and endangered species recovery.

- lower crest elevations will also facilitate the dispersal of tidal litter, which is an important natural component of tidal refugial habitat (Johnston 1957).

- Lower levee crests and gentle, vegetated levee slopes should minimize levee erosion and eliminate maintenance requirements.

- Lower crests will subside at slower rates than levees capped at higher elevations.

- Elimination of the recurrent disturbance cycle associated with dike erosion and maintenance may reduce the competitive advantage of many non-native plants, and high marsh vegetation may eventually dominate.